

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (CURRENTLY AMENDED) A ball motion measuring apparatus comprising:
a CCD camera for photographing a flying ball to obtain original image data;
a calculating section for carrying out a magnifying process on only a portion of
an original image including a ball image, thereby calculating magnified image data;
and

a display section for displaying a magnified image based on the magnified image
data wherein the magnified image data is used to calculate ball motion,

wherein the calculating section extracts coordinates of an apparent point on the
magnified image data, compares the extracted apparent coordinates with
corresponding predetermined undistorted coordinates of the ball to thereby calculate
an error between the extracted apparent coordinates and the predetermined
coordinates, and calculates true coordinates of the points on the magnified image data
based on the calculated error, and

wherein the calculated error increases in accordance with a distance from a
center of the magnified image data.

2. (PREVIOUSLY PRESENTED) The ball motion measuring apparatus
according to claim 1, wherein the CCD camera has a horizontal view angle of 10
degrees or more.

3. (CURRENTLY AMENDED) A ball motion measuring apparatus comprising:

a CCD camera for photographing a flying ball to obtain original image data; and
a calculating section for correcting a coordinate error of only a ball image in the original image made by a distortion of an original image which is caused by a lens of the CCD camera, thereby calculating correction data, said correction data being used to calculate true coordinates of the ball image,

wherein the coordinate error is corrected based on a correction ratio between a coordinate of a position on an undistorted image of the ball and a corresponding position on the ball in the distorted original image, and

wherein the correction ratio increases in accordance with a distance from a center of the distorted original image.

4. (CANCELLED).

5. (ORIGINAL) The ball motion measuring apparatus according to claim 3, wherein the CCD camera has a horizontal view angle of 10 degrees or more.

6. (CURRENTLY AMENDED) A ball motion measuring apparatus comprising:

a CCD camera for photographing a flying ball to obtain original image data; and
a calculating section for correcting a coordinate error of only a ball image in the original image made by a shift of a direction of the ball image from a direction of an optical axis of the CCD camera, thereby calculating correction data, said correction data being used to calculate true coordinates of the ball image,

wherein the coordinate error is corrected based on a correction ratio between a coordinate of a position on an undistorted image of the ball and a corresponding position on the ball in a distorted image of the ball caused by the shift of the direction of the ball image, and

wherein the correction ratio increases in accordance with a distance from a center of the original image data.

7. (ORIGINAL) The ball motion measuring apparatus according to claim 6, wherein the correction of the coordinate error serves to convert data obtained from an original image into data obtained by photographing a front part of the ball at infinity.

8. (ORIGINAL) The ball motion measuring apparatus according to claim 6, wherein the CCD camera has a horizontal view angle of 10 degrees or more.

9. (CURRENTLY AMENDED) The ball motion measuring apparatus according to claim 1, ~~wherein said calculating section corrects a coordinate error of only the ball image in the original image made by a distortion of the original image which is caused by a lens of the CCD camera, thereby calculating correction data, said correction data being the calculated true coordinates of the points on the magnified image data are~~ used to calculate true coordinates of the ball image.

10. (CANCELLED).